

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 6, 7, 11, 12, 17, 25, 30, 33, and 39. Applicants hereby submit a version with markings to show changes made:

1. (currently amended) An *in vivo* process for delivering polynucleotides to skeletal muscle cells in a limb of a mammal, comprising:
 - a) inserting an injector selected from the group consisting of a syringe needle and catheter into a ~~limb blood vessel in the mammal~~ an artery in said limb;
 - b) applying a device for impeding blood flow ~~external~~ to the surface of the mammal's ~~skin to occlude blood vessels in the~~ of said limb;
 - c) applying sufficient pressure against said limb with said device to occlude blood flow to said limb; and,
 - e d) injecting a solution containing the polynucleotides through said injector into the lumen of ~~the vessel~~ said artery distal to the occlusion thereby delivering the polynucleotides to said skeletal muscle cells distal to said occlusion in the limb.
2. (original) The process of claim 1 wherein the polynucleotide consists of naked DNA.
3. (original) The process of claim 1 wherein the polynucleotide is selected from the group consisting of a viral vector and a non-viral vector.
- 4-5. (cancelled)
6. (previously presented) The process of claim 1 wherein the muscle cell consists of a leg muscle cell.
7. (previously presented) The process of claim 1 wherein the muscle cell consists of an arm muscle cell.
8. (original) The process of claim 7 wherein the arm muscle cell consists of an anterior muscle cell.
9. (original) The process of claim 8 wherein the anterior muscle cell consists of an anterior superficial muscle cell.
10. (canceled)
11. (previously presented) The process of claim 9 wherein the muscle cell is selected from the group consisting of palmaris longus, pronator teres, flexor carpi radialis, flexor carpi ulnaris, and flexor digitorum superficialis.
12. (previously presented) The process of claim 8 wherein the anterior muscle cell is selected from the group consisting of flexor digitorum profundus, and pronator quadratus.

13. (original) The process of claim 7 wherein the arm muscle cell consists of a posterior muscle cell.
14. (original) The process of claim 13 wherein the posterior muscle cell consists of a posterior superficial muscle cell.
15. (canceled)
16. (previously presented) The process of claim 14 wherein the muscle cell is selected from the group consisting of brachioradialis, extensor carpi radialis longus, extensor carpi, radialis brevis, extensor digitorum, anconeus, extensor and carpi ulnaris.
17. (previously presented) The process of claim 13 wherein the posterior muscle cell is selected from the group consisting of supinator, extensor pollicis longus, abductor pollicis longus, extensor digiti secund et teriti, and extensor digiti quart et minimi.
18. (original) The process of claim 7 wherein the arm muscle cell consists of a hand muscle cell.
19. (original) The process of claim 18 wherein the hand muscle cell consists of a thumb muscle cell.
20. (original) The process of claim 18 wherein the hand muscle cell consists of an interosseus cell.
21. (original) The process of claim 6 wherein the leg muscle cell consists of a posterior muscle cell.
22. (original) The process of claim 21 wherein the posterior muscle cell consists of a superficial cell.
23. (canceled)
24. (original) The process of claim 22 wherein the superficial cell is selected from the group consisting of gastrocnemius and soleus.
25. (previously presented) The process of claim 21 wherein the posterior muscle cell is selected from the group consisting of popliteus, flexor digitorum longus, flexor hallucis longus, and tibialis posterior.
26. (original) The process of claim 6 wherein the leg muscle cell consists of a anterior muscle cell.
27. (canceled)
28. (original) The process of claim 6 wherein the leg muscle cell consists of a foot muscle cell.

29. (original) The process of claim 26 wherein the anterior muscle cell is selected from the group consisting of tibialis anterior, extensor hallucis longus, extensor digitorum longus, and abductor hallucis longus.
30. (previously presented) The process of claim 6 wherein the leg muscle cell is selected from the group consisting of peroneus longus and peroneus brevis.
31. (original) The process of claim 28 wherein the foot muscle cell is selected from the group consisting of extensor digitorum brevis and extensor hallucis brevis.
- 32-33. (canceled)
34. (currently amended) The process of claim 33 wherein ~~compressing mammalian skin~~ said device for impeding blood flow consists of ~~applying~~ a tourniquet ~~over the skin~~.
35. (currently amended) The process of claim 33 wherein ~~compressing mammalian skin~~ said device for impeding blood flow consists of ~~applying~~ a cuff ~~over the skin~~ surrounding said limb.
36. (currently amended) The process of claim 35 wherein ~~compressing mammalian skin~~ said device for impeding blood flow consists of ~~applying~~ a sphygmomanometer cuff ~~over the skin~~.
- 37.-38. (canceled)
39. (currently amended) An *in vivo* process for delivering polynucleotides to skeletal muscle cells in a limb of a mammal, comprising:
- a) inserting an injector selected from the group consisting of syringe needle and catheter into a ~~limb~~ blood vessel in said limb of in the mammal and applying pressure to the blood vessel wherein the pressure occludes blood flow through said blood vessel and is applied to the skin of said limb by a device external to ~~mammalian~~ the skin of said mammal and;
 - b) injecting a solution containing the polynucleotides into the lumen of the said blood vessel distal to the occlusion thereby delivering the polynucleotides to said skeletal muscle cells in the limb distal to the occlusion; and,
 - c) ~~maintaining function of the limb~~ wherein function of the limb is not affected by inserting the injector, applying pressure to the vessel, and injecting the solution.
40. (canceled)